ELECTRICAL CHARACTERISTICS

INPUT (T_A = 0°C to 70°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ.*	Max	Unit
Forward Voltage	V_F	I_F = 16mA, T_A = 25°C		1.45	1.8	V
Reverse Voltage	V_R	I_R = 10µA	5.0			V
Temperature Coefficient	V_F/T_A	I_F = 16mA		-1.9		mV/°C
Input Capacitance	C_{IN}	V_F = 0V, f = 1MHz		60		pF

OUTPUT (T_A = 0°C to 70°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ.*	Max	Unit
Logic High Output Current	I_{OH}	I_F = 0mA, V_O = V_{CC} = 5.5V, T_A = 25°C		0.001	0.5	µA
		I_F = 0mA, V_O = V_{CC} = 15V, T_A = 25°C			50	
Logic Low Supply Current	I_{CCL}	I_{F1} = I_{F2} = 16mA, V_O = Open, V_{CC} = 15V		140	400	µA
Logic High Supply Current	I_{CCH}	I_F = 0mA, V_O = Open V_{CC} = 15V, T_A = 25°C		0.01	1	µA
		I_F = 0mA, V_O = Open V_{CC} = 15V			4	

*** Typical Values at T_A = 25°C**

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ELECTRICAL CHARACTERISTICS

COUPLED (T_A = 0°C to 70°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ.*	Max	Unit
Current Transfer Ratio	CTR	ICPL2530 ICPL2531 I_F = 16mA, V_O = 0.4V V_{CC} = 4.5V, T_A = 25°C	7 19		50 50	%
		ICPL2530 ICPL2531 I_F = 16mA, V_O = 0.5V V_{CC} = 4.5V	5 15			%
Logic Low Output Voltage	V_{OL}	ICPL2530 I_F = 16mA, I_O = 1.1mA V_{CC} = 4.5V, T_A = 25°C		0.18	0.5	V
		ICPL2531 I_F = 16mA, I_O = 3mA V_{CC} = 4.5V, T_A = 25°C		0.25	0.5	V
		ICPL2530 I_F = 16mA, I_O = 0.8mA V_{CC} = 4.5V			0.5	V
		ICPL2531 I_F = 16mA, I_O = 2.4mA V_{CC} = 4.5V			0.5	V

*** Typical Values at T_A = 25°C**

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ELECTRICAL CHARACTERISTICS

Switching Characteristics

(T_A = 0°C to 70°C, Vcc = 5V, I_F = 16mA unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ.*	Max	Unit
Propagation Delay Time to Logic Low	t_{PHL}	ICPL2530 R_L = 4.1kΩ, T_A = 25°C R_L = 4.1kΩ		0.35	1.5 2.0	µs
		ICPL2531 R_L = 1.9kΩ, T_A = 25°C R_L = 1.9kΩ		0.35	0.8 1.0	
Propagation Delay Time to Logic High	t_{PLH}	ICPL2530 R_L = 4.1kΩ, T_A = 25°C R_L = 4.1kΩ		0.5	1.5 2.0	µs
		ICPL2531 R_L = 1.9kΩ, T_A = 25°C R_L = 1.9kΩ		0.3	0.8 1.0	
Common Mode Transient Immunity at Logic High	CM_H	ICPL2530 I_F = 0mA, V_{CM} = 10Vp-p, R_L = 4.1kΩ , T_A = 25°C	1000	10000		V/µs
		ICPL2531 I_F = 0mA, V_{CM} = 1000Vp-p, R_L = 1.9kΩ , T_A = 25°C	1000	10000		V/µs
Common Mode Transient Immunity at Logic Low	CM_L	ICPL2530 I_F = 16mA, V_{CM} = 10Vp-p, R_L = 4.1kΩ , T_A = 25°C	1000	10000		V/µs
		ICPL2531 I_F = 16mA, V_{CM} = 1000Vp-p, R_L = 1.9kΩ , T_A = 25°C	1000	10000		V/µs

*** Typical Values at T_A = 25°C**

- Common mode transient immunity in logic high level is the maximum tolerable (positive) dV_{CM}/dt on the leading edge of the common mode pulse signal V_{CM}, to assure that the output will remain in a logic high state (i.e. $V_O > 2.0V$).

- Common mode transient immunity in logic low level is the maximum tolerable (negative) dV_{CM}/dt on the trailing edge of the common mode pulse signal, V_{CM}, to assure that the output will remain in a logic low state (i.e. $V_O < 0.8V$).

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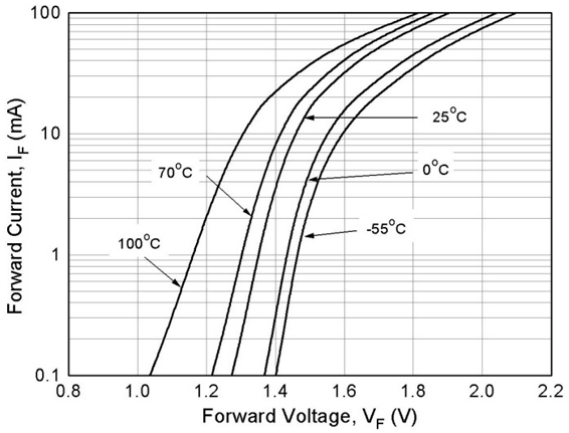

Fig 1 Forward Current vs Forward Voltage

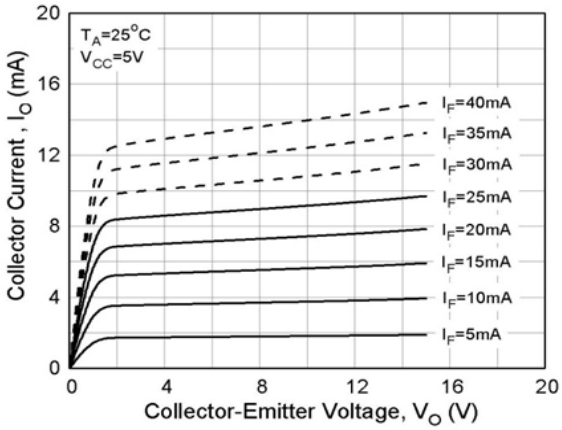

Fig 2 Output Current vs Output Voltage

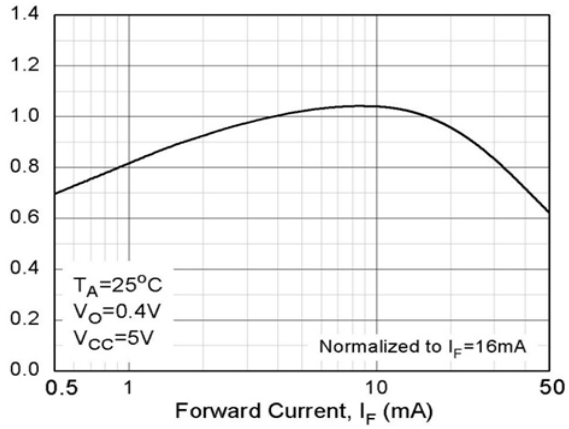

Fig 3 Normalized CTR vs Forward Current

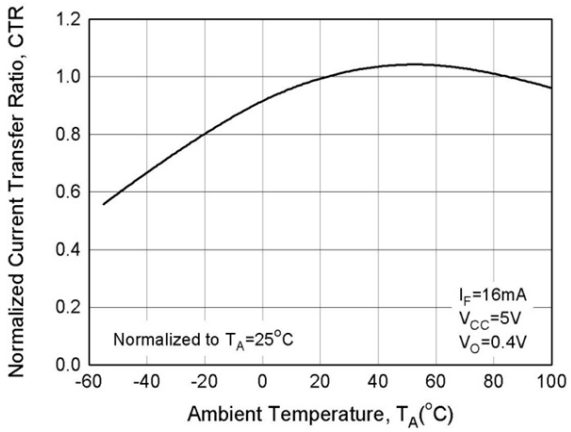

Fig 4 Normalized CTR vs Ambient Temperature

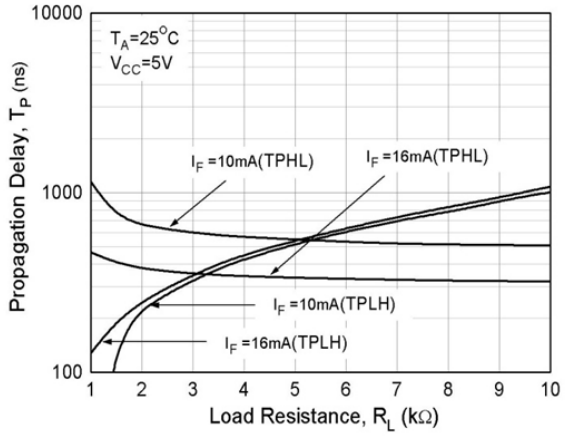

Fig 5 Propagation Delay vs Load Resistance

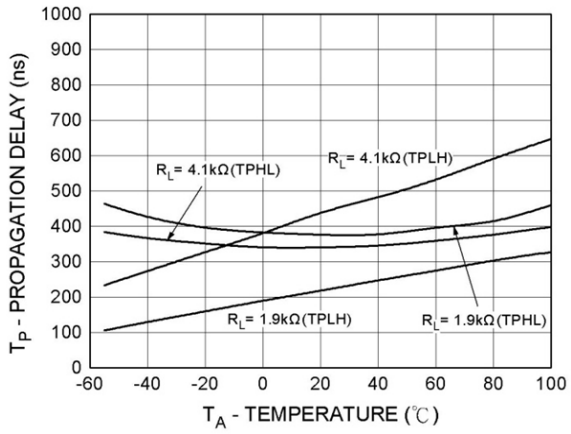

Fig 6 Propagation Delay vs Ambient Temperature

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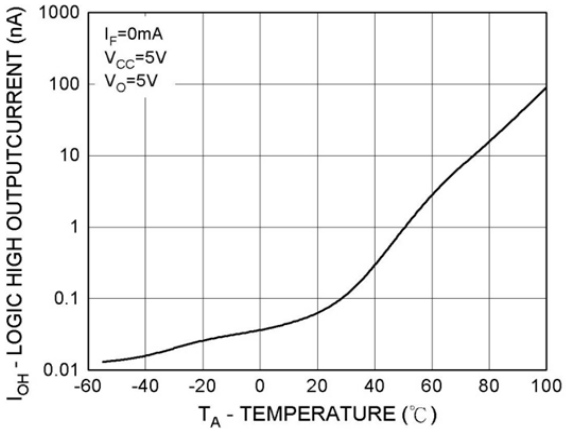
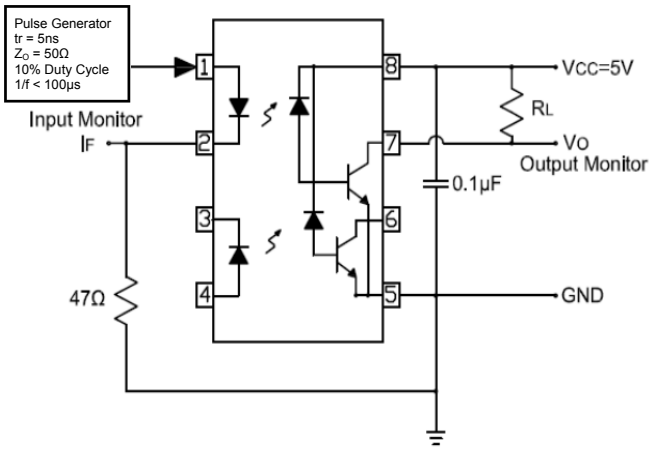


Fig 7 Logic High Output Current vs T_A



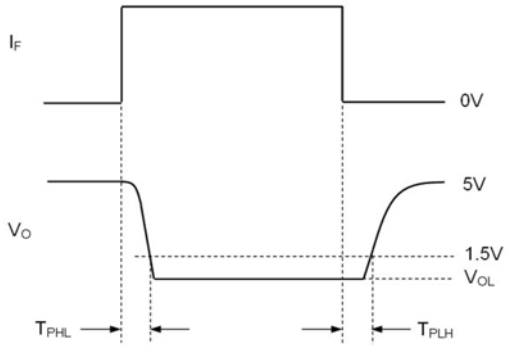
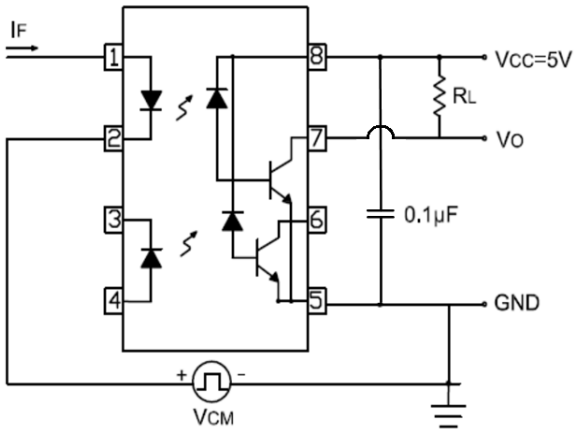


Fig 8 Switching Time Test Circuit



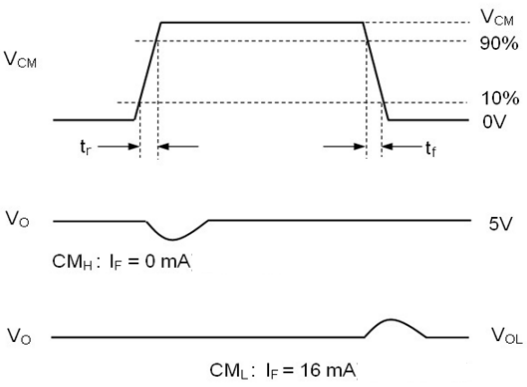


Fig 9 Transient Immunity Test Circuit

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ORDER INFORMATION

ICPL2530			
After PN	**PN**	**Description**	**Packing quantity**
None	ICPL2530	Standard DIP8	45 pcs per tube
G	ICPL2530G	10mm Lead Spacing	45 pcs per tube
SM	ICPL2530SM	Surface Mount	45 pcs per tube
SMT&R	ICPL2530SMT&R	Surface Mount Tape & Reel	1000 pcs per reel

ICPL2531			
After PN	**PN**	**Description**	**Packing quantity**
None	ICPL2531	Standard DIP8	45 pcs per tube
G	ICPL2531G	10mm Lead Spacing	45 pcs per tube
SM	ICPL2531SM	Surface Mount	50 pcs per tube
SMT&R	ICPL2531SMT&R	Surface Mount Tape & Reel	1000 pcs per reel

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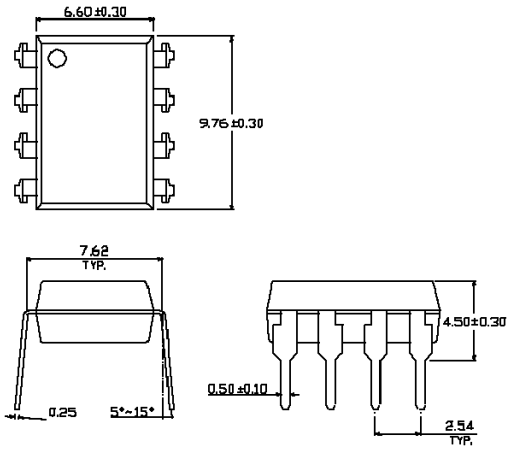
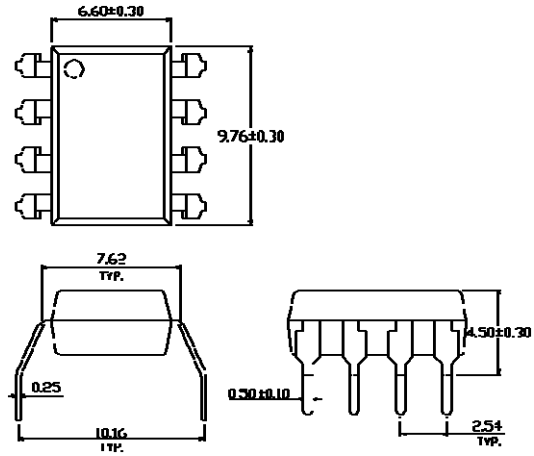
PACKAGE DIMENSIONS (mm)

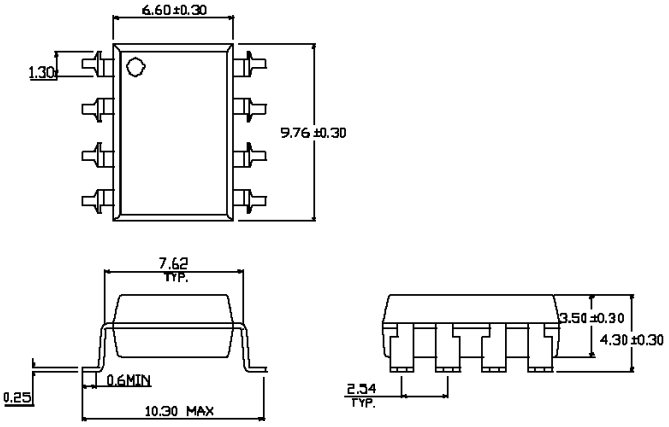
DIP



G FORM



SMD



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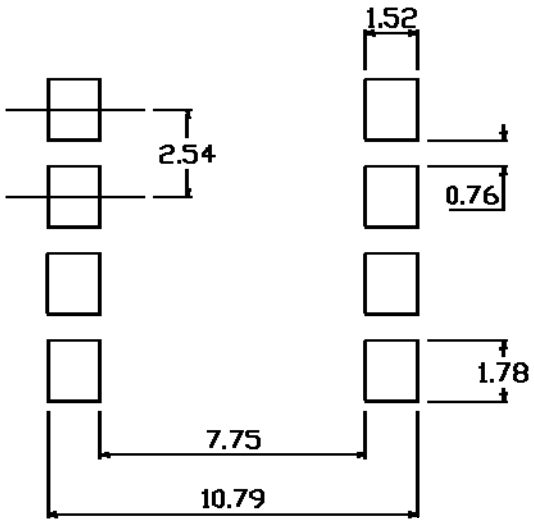
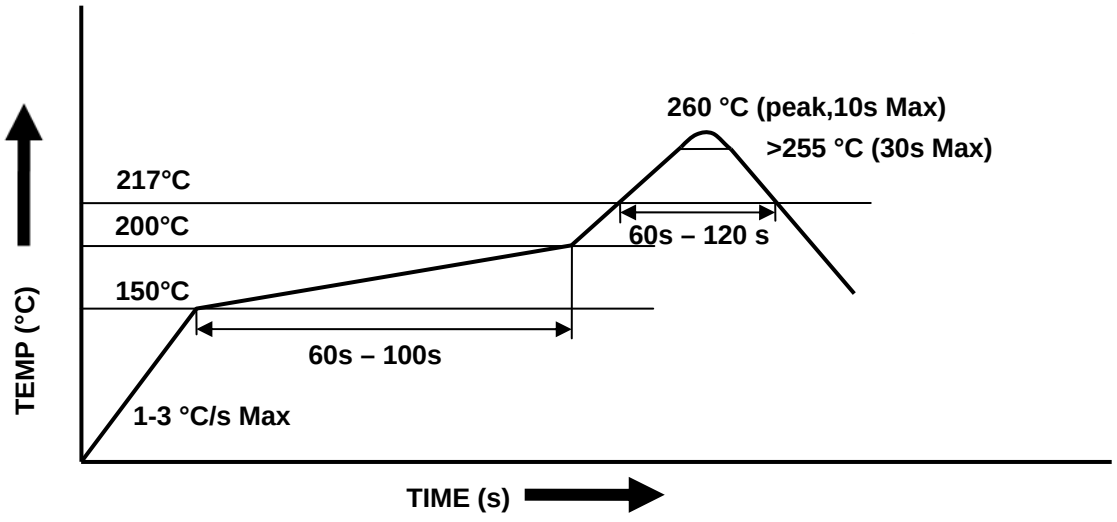
RECOMMENDED PAD LAYOUT FOR SMD (mm)



REFLOW SOLDERING TEMPERATURE PROFILE



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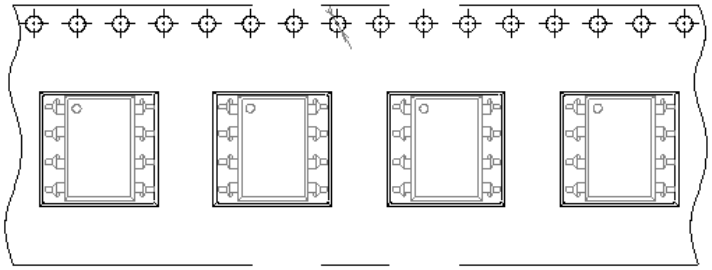
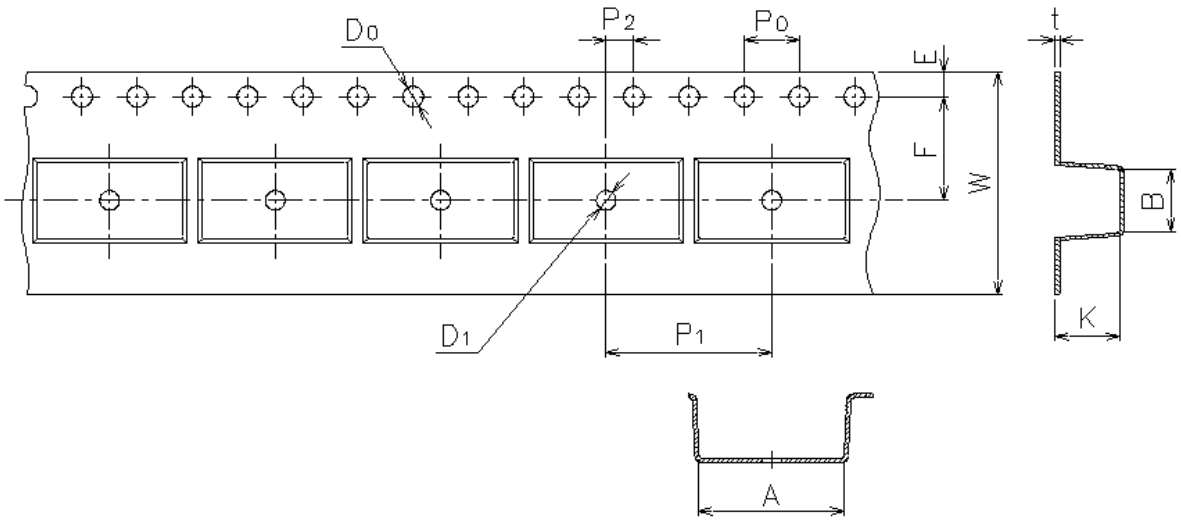
TAPE AND REEL PACKAGING



Direction of feed from reel



Dimension	A	B	D_0	D_1	E	F
(mm)	10.4±0.1	10.0±0.1	1.5±0.1	1.5±0.1	1.75±0.1	7.5±0.1
Dimension	P_0	P_1	P_2	t	W	K
(mm)	4.0±0.1	12.0±0.1	2.0±0.1	0.4±0.1	16.0 +0.3/-0.1	4.5±0.1

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- Do not immerse device’s body in solder paste.

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